

CLAIMS

Having thus described my invention, I claim:

1 1. A thermal energy storage tank comprising:
2 an insulating tank having a predetermined length a predetermined width and a
3 predetermined height;
4 said tank having an open top end with lid and a closed bottom end;
5 said tank having four sides;
6 a crossbar affixed on two opposing sides across the width of said open top end
7 of said tank;
8 a pivoting arm having a proximal end and a distal end; and
9 a heat exchanger affixed to said pivoting arm wherein said heat exchanger has
10 a solution running therethrough.

1 2. The thermal energy storage tank of claim 1 wherein:
2 said pivoting arm is pivotally affixed to said cross-bar on said proximal end.

1 3. The thermal energy storage tank of claim 2 wherein:
2 said distal end of said pivoting arm has a means for securing a counterweight
3 arm.

1 4. The thermal energy storage tank of claim 3 wherein:
2 said counterweight arm has a means for securing a counterweight.

1 5. The thermal energy storage tank of claim 3 wherein:
2 an adjustable calibration rod is attached on said counterweight arm; and
3 said adjustable calibration rod touches a measuring device.

1 6. The thermal energy storage tank of claim 5 wherein:
2 said measuring device is a hydraulic bellow.

1 7. The thermal energy storage tank of claim 5 wherein:
2 said measuring device is a hydraulic cylinder.

1 8. The thermal energy storage tank of claim 6 wherein:
2 said hydraulic bellow is electrically connected to a digital control system.

1 9. The thermal energy storage tank of claim 7 wherein:
2 said hydraulic cylinder is electrically connected to a digital control system.

1 **10.** The thermal energy storage tank of claim 1 wherein:

2 said solution is a mixture of water and glycol.

1 **11.** The thermal energy storage tank of claim 1 wherein:

2 said means for attaching are bolts.

1 **12.** The thermal energy storage tank of claim 1 wherein:

2 said means for attaching are weldments.

1 **13.** The thermal energy storage tank of claim 1 wherein:

2 said pivoting arm is pivotally affixed to said crossbar at a location between said

3 proximal end and said distal end.